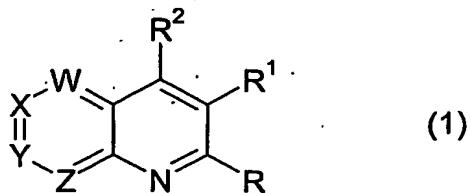


## CLAIMS

1. The compound of the general formula (1):



5 wherein

W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>;

R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl;

R and R<sup>2</sup> are independently H, halo, C<sub>1-8</sub> alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, cyano or NR<sup>3</sup>R<sup>4</sup>, provided that at least one of R and R<sup>2</sup> is NR<sup>3</sup>R<sup>4</sup>;

10. R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl(C<sub>1-4</sub>)alkoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino;

R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)alkyl, C<sub>3-8</sub>

15 cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl, NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or

R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,

together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a morpholine,

20 thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C<sub>1-4</sub>)alkyl (especially N-methyl) ring; and

R<sup>5</sup> and R<sup>6</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl or heteroaryl(C<sub>1-8</sub>)alkyl;

any of the foregoing alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for

25 R<sup>8</sup>) being optionally substituted with halogen, cyano, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkoxycarbonyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> alkylthio, tri(C<sub>1-4</sub>)alkylsilyl, C<sub>1-6</sub> alkylamino or C<sub>1-6</sub> dialkylamino,

any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C<sub>1-4</sub> alkyl (especially methyl), and

any of the foregoing aryl or heteroaryl groups or moieties being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>1-6</sub> alkoxy, C<sub>2-6</sub> alkenyloxy, C<sub>2-6</sub> alkynyoxy, halo(C<sub>1-6</sub>)alkyl, halo(C<sub>1-6</sub>)alkoxy, C<sub>1-6</sub> alkylthio, halo(C<sub>1-6</sub>)alkylthio, hydroxy(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-6</sub>)alkyl, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NR<sup>"</sup>R<sup>"</sup>, -NHCOR<sup>"</sup>, -NHCONR<sup>"</sup>R<sup>"</sup>, -CONR<sup>"</sup>R<sup>"</sup>, -SO<sub>2</sub>R<sup>"</sup>, -OSO<sub>2</sub>R<sup>"</sup>, -COR<sup>"</sup>, -CR<sup>"</sup>=NR<sup>"</sup> or -N=CR<sup>"</sup>R<sup>"</sup>, in which R<sup>"</sup> and R<sup>"</sup> are independently hydrogen, C<sub>1-4</sub> alkyl, halo-(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy, halo(C<sub>1-4</sub>)alkoxy, C<sub>1-4</sub> alkylthio, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy.

2. A compound according to claim 1 wherein W, Z and one of X and Y are N and the other one of X and Y is CH.

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3. A compound according to claim 1 or 2 wherein R<sup>2</sup> is NR<sup>3</sup>R<sup>4</sup>.

4. A compound according to claim 3 wherein R is halo.

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5. A compound according to any one of the preceding claims wherein R<sup>3</sup> is C<sub>1-8</sub> alkyl, halo(C<sub>1-8</sub>)alkyl, hydroxy(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkoxyhalo(C<sub>1-8</sub>)alkyl, tri(C<sub>1-4</sub>)alkylsilyl(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkylcarbonyl(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkylcarbonylhalo(C<sub>1-8</sub>)alkyl, phenyl(C<sub>1-4</sub>)alkyl, C<sub>2-8</sub> alkenyl, halo(C<sub>2-8</sub>)alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl optionally substituted with chloro, fluoro or methyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenylamino, piperidino or morpholino, the phenyl ring of phenylalkyl or phenylamino being optionally substituted with one, two or three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy and halo-(C<sub>1-4</sub>)alkoxy; and

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R<sup>4</sup> is H, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl or amino, or

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R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or alkenylene chain optionally substituted with methyl, or, together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a

morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine *N*-(C<sub>1-4</sub>)alkyl (especially *N*-methyl) ring, in which the morpholine or piperazine rings are optionally substituted with methyl.

- 5        6. A compound according to any one of the preceding claims wherein R<sup>1</sup> is phenyl optionally substituted with from one to five halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, pyridyl optionally substituted with from one to four halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, 2- or 3-thienyl optionally substituted with from one to three halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, or piperidino or morpholino both optionally substituted with one or two methyl groups.
- 10      7. A compound according to claim 6 wherein R<sup>1</sup> is 2,6-difluorophenyl, 2-fluoro-6-chlorophenyl, 2,5,6-trifluorophenyl, 2,4,6-trifluorophenyl, 2,6-difluoro-4-methoxyphenyl or pentafluorophenyl.
- 15      8. A compound according to claim 1 wherein W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>; R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl; one of R and R<sup>2</sup> (preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup> and the other is halo; R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)-alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl(C<sub>1-4</sub>)alcoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino; R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl, NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,
- 20      9. A compound according to claim 1 wherein W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>; R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl; one of R and R<sup>2</sup> (preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup> and the other is halo; R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)-alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl(C<sub>1-4</sub>)alcoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino; R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl, NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,
- 25      10. A compound according to claim 1 wherein W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>; R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl; one of R and R<sup>2</sup> (preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup> and the other is halo; R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)-alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl(C<sub>1-4</sub>)alcoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino; R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl, NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,
- 30      11. A compound according to claim 1 wherein W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>; R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl; one of R and R<sup>2</sup> (preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup> and the other is halo; R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)-alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl(C<sub>1-4</sub>)alcoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino; R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl, NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,

together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C<sub>1-4</sub>)alkyl (especially N-methyl) ring; and R<sup>5</sup> and R<sup>6</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl or heteroaryl(C<sub>1-8</sub>)alkyl; any of the foregoing alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R<sup>8</sup>) being optionally substituted with halogen, cyano, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkoxy carbonyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> alkylthio, tri(C<sub>1-4</sub>)alkylsilyl, C<sub>1-6</sub> alkylamino or C<sub>1-6</sub> dialkylamino,

any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C<sub>1-4</sub> alkyl (especially methyl), and any of the aryl, heteroaryl, aryloxy or heteroaryl groups being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>1-6</sub> alkoxy, C<sub>2-6</sub> alkenyloxy, C<sub>2-6</sub> alkynyoxy, halo(C<sub>1-6</sub>)alkyl, halo(C<sub>1-6</sub>)alkoxy, C<sub>1-6</sub> alkylthio, halo(C<sub>1-6</sub>)alkylthio, hydroxy(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-6</sub>)alkyl, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenoxy, benzyloxy, benzoxyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NR<sup>"R"</sup>, -NHCOR<sup>"R"</sup>, -NHCONR<sup>"R"</sup>, -CONR<sup>"R"</sup>, -SO<sub>2</sub>R<sup>"R"</sup>, -OSO<sub>2</sub>R<sup>"R"</sup>, -COR<sup>"R"</sup>, -CR<sup>"R"</sup>=NR<sup>"R"</sup> or -N=CR<sup>"R"</sup>, in which R<sup>"R"</sup> and R<sup>"R"</sup> are independently hydrogen, C<sub>1-4</sub> alkyl, halo-(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy, halo(C<sub>1-4</sub>)alkoxy, C<sub>1-4</sub> alkylthio, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy.

9. A compound according to claim 1 wherein

W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>;

R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl;

one of R and R<sup>2</sup> (preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup> and the other is halo;

R<sup>1</sup> is halo, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)-alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C<sub>1-4</sub>)alkyl, aryl(C<sub>1-4</sub>)alkoxy, heteroaryl(C<sub>1-4</sub>)alkyl, heteroaryl-(C<sub>1-4</sub>)alkoxy, aryl(C<sub>1-4</sub>)alkylthio, heteroaryl(C<sub>1-4</sub>)alkylthio, morpholino, piperidino or pyrrolidino;

R<sup>3</sup> is C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>2-4</sub> alkenyl, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)-alkyl or phenylamino in which the phenyl ring is optionally substituted with one, two or three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy and halo(C<sub>1-4</sub>)alkoxy; and R<sup>4</sup> is H, C<sub>1-4</sub> alkyl or amino, or

5 R<sup>3</sup> and R<sup>4</sup> together form a C<sub>4-6</sub> alkylene chain optionally substituted with C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy, or,

together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C<sub>1-4</sub>)alkyl (especially N-methyl) ring;

10 any of the alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R<sup>8</sup>) being optionally substituted with halogen, cyano, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkoxycarbonyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> alkylthio, tri(C<sub>1-4</sub>)alkylsilyl, C<sub>1-6</sub> alkylamino or C<sub>1-6</sub> dialkylamino,

any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C<sub>1-4</sub> alkyl (especially methyl), and any of the aryl or heteroaryl groups or moieties being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>1-6</sub> alkoxy, C<sub>2-6</sub> alkenyloxy, C<sub>2-6</sub> alkynyoxy, halo(C<sub>1-6</sub>)alkyl, halo(C<sub>1-6</sub>)alkoxy, C<sub>1-6</sub> alkylthio, halo(C<sub>1-6</sub>)alkylthio, hydroxy(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-6</sub>)-alkyl, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NR<sup>"</sup>R<sup>"",</sup> -NHCOR<sup>"",</sup> -NHCONR<sup>"</sup>R<sup>"",</sup> -CONR<sup>"</sup>R<sup>"",</sup> -SO<sub>2</sub>R<sup>"",</sup> -OSO<sub>2</sub>R<sup>"",</sup> -COR<sup>"",</sup> -CR<sup>""</sup>=NR<sup>"",</sup> or

20 -N=CR<sup>"</sup>R<sup>"",</sup> in which R<sup>"</sup> and R<sup>"",</sup> are independently hydrogen, C<sub>1-4</sub> alkyl, halo-(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy, halo(C<sub>1-4</sub>)alkoxy, C<sub>1-4</sub> alkylthio, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy.

25 10. A compound according to claim 1 wherein

W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>;

30 R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl;

R and R<sup>2</sup> are independently H, halo, C<sub>1-8</sub> alkyl, C<sub>1-8</sub> alkoxy, C<sub>1-8</sub> alkylthio, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, cyano or NR<sup>3</sup>R<sup>4</sup>, provided that at least one of R and R<sup>2</sup>

(preferably R<sup>2</sup>) is NR<sup>3</sup>R<sup>4</sup>;

R<sup>1</sup> is optionally substituted phenyl;

R<sup>3</sup> and R<sup>4</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl, heteroaryl(C<sub>1-8</sub>)alkyl,

5 NR<sup>5</sup>R<sup>6</sup>, provided that not both R<sup>3</sup> and R<sup>4</sup> are H or NR<sup>5</sup>R<sup>6</sup>, or

R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally

substituted with one or more C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy groups, or,

together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide

10 ring or a piperazine or piperazine N-(C<sub>1-4</sub>)alkyl (especially N-methyl) ring; and

R<sup>5</sup> and R<sup>6</sup> are independently H, C<sub>1-8</sub> alkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, aryl, aryl(C<sub>1-8</sub>)-alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-6</sub>)alkyl, heteroaryl or heteroaryl(C<sub>1-8</sub>)alkyl;

any of the alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R<sup>8</sup>) being optionally substituted with halogen, cyano, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkoxycarbonyl, C<sub>1-6</sub> haloalkoxy, C<sub>1-6</sub> alkylthio, tri(C<sub>1-4</sub>)alkylsilyl, C<sub>1-6</sub> alkylamino or C<sub>1-6</sub> dialkylamino,

any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C<sub>1-4</sub> alkyl (especially methyl), and any of the aryl or heteroaryl groups or moieties, including the phenyl group of R<sup>1</sup>,

20 being optionally substituted with one or more substituents selected from halo,

hydroxy, mercapto, C<sub>1-6</sub> alkyl, C<sub>2-6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>1-6</sub> alkoxy, C<sub>2-6</sub> alkenyloxy, C<sub>2-6</sub> alkynyloxy, halo(C<sub>1-6</sub>)alkyl, halo(C<sub>1-6</sub>)alkoxy, C<sub>1-6</sub> alkylthio, halo(C<sub>1-6</sub>)alkylthio, hydroxy(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-6</sub>)alkyl, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro,

25 -NR<sup>"R"</sup>, -NHCOR<sup>"R"</sup>, -NHCONR<sup>"R"</sup>, -CONR<sup>"R"</sup>, -SO<sub>2</sub>R<sup>"R"</sup>, -OSO<sub>2</sub>R<sup>"R"</sup>, -COR<sup>"R"</sup>,

-CR<sup>"R"</sup>=NR<sup>"R"</sup> or -N=CR<sup>"R"</sup>, in which R<sup>"R"</sup> and R<sup>"R"</sup> are independently hydrogen, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy, halo(C<sub>1-4</sub>)alkoxy, C<sub>1-4</sub> alkylthio, C<sub>3-6</sub> cycloalkyl, C<sub>3-6</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C<sub>1-4</sub> alkyl or C<sub>1-4</sub> alkoxy.

30

11. A compound according to claim 1 wherein

W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>;

R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy, C<sub>1-4</sub> alkylthio or halo(C<sub>1-4</sub>)alkyl;

R is H, halo, C<sub>1-4</sub> alkyl), C<sub>1-4</sub> alkoxy or cyano;

R<sup>1</sup> is phenyl optionally substituted with from one to five halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, pyridyl optionally substituted with from one to four halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, 2- or 3-thienyl optionally substituted with from one to three halogen atoms or with from one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy, or piperidino or morpholino both optionally substituted with one or two methyl groups;

R<sup>2</sup> is NR<sup>3</sup>R<sup>4</sup>;

R<sup>3</sup> is C<sub>1-8</sub> alkyl, halo(C<sub>1-8</sub>)alkyl, hydroxy(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkoxy(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkoxyhalo(C<sub>1-8</sub>)alkyl, tri(C<sub>1-4</sub>)alkylsilyl(C<sub>1-6</sub>)alkyl, C<sub>1-4</sub> alkylcarbonyl(C<sub>1-8</sub>)alkyl, C<sub>1-4</sub> alkylcarbonylhalo(C<sub>1-8</sub>)alkyl, phenyl(C<sub>1-4</sub>)alkyl, C<sub>2-8</sub> alkenyl, halo(C<sub>2-8</sub>)alkenyl, C<sub>2-8</sub> alkynyl, C<sub>3-8</sub> cycloalkyl optionally substituted with chloro, fluoro or methyl, C<sub>3-8</sub> cycloalkyl(C<sub>1-4</sub>)alkyl, phenylamino, piperidino or morpholino, the phenyl ring of phenylalkyl or phenylamino being optionally substituted with one, two or three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy and halo-(C<sub>1-4</sub>)alkoxy; and

R<sup>4</sup> is H, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl or amino, or

R<sup>3</sup> and R<sup>4</sup> together form a C<sub>3-7</sub> alkylene or C<sub>3-7</sub> alkenylene chain optionally substituted with methyl, or,

together with the nitrogen atom to which they are attached, R<sup>3</sup> and R<sup>4</sup> form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C<sub>1-4</sub>)alkyl (especially N-methyl) ring, in which the morpholine or piperazine rings are optionally substituted with methyl

12. A compound according to claim 1 wherein

W, Z and one of X and Y are N and the other one of X and Y is CR<sup>8</sup>;

R<sup>8</sup> is H, halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkyl;

R is halo;

R<sup>1</sup> is phenyl optionally substituted with from one to five halogen atoms or with from

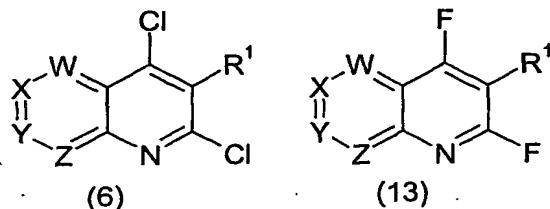
one to three substituents selected from halo, C<sub>1-4</sub> alkyl, halo(C<sub>1-4</sub>)alkyl, C<sub>1-4</sub> alkoxy or halo(C<sub>1-4</sub>)alkoxy;

$R^2$  is  $NR^3R^4$ ;

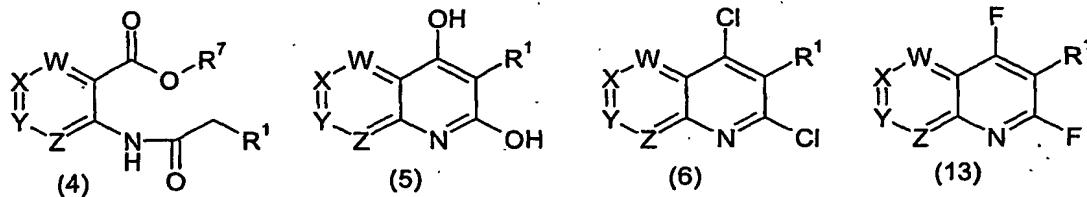
$R^3$  is  $C_{1-4}$  alkyl, halo( $C_{1-4}$ )alkyl,  $C_{2-4}$  alkenyl,  $C_{3-6}$  cycloalkyl,  $C_{3-6}$  cycloalkyl( $C_{1-4}$ )-alkyl or phenylamino in which the phenyl ring is optionally substituted with one, two or three substituents selected from halo,  $C_{1-4}$  alkyl, halo( $C_{1-4}$ )alkyl,  $C_{1-4}$  alkoxy and halo( $C_{1-4}$ )alkoxy; and

$R^4$  is H, C<sub>1-4</sub> alkyl or amino, or  $R^3$  and  $R^4$  together form a C<sub>4-6</sub> alkylene chain optionally substituted with methyl, or, together with the nitrogen atom to which they are attached,  $R^3$  and  $R^4$  form a morpholine ring.

13. A process for preparing a compound of the general formula (1) according to claim 1 wherein one of R and R<sup>2</sup> is chloro or fluoro and the other is NR<sup>3</sup>R<sup>4</sup> and W, X, Y, Z, R<sup>1</sup>, R<sup>3</sup> and R<sup>4</sup> are as defined in claim 1, which comprises reacting an amine of the general formula NR<sup>3</sup>R<sup>4</sup> with a compound of the general formula (6) or (13):



14. The intermediate chemicals having the general formulae (4), (5), (6) and (13):



wherein W, X, Y, Z and R<sup>1</sup> are as defined in claim 1 and R<sup>7</sup> is C<sub>1-4</sub> alkyl.

15. A plant fungicidal composition comprising a fungicidally effective amount of a compound as defined in claim 1 and a suitable carrier or diluent therefor.

16. A method of combating or controlling phytopathogenic fungi which comprises applying to a plant, to a seed of a plant, to the locus of the plant or seed or to soil or to any other plant growth medium, a fungicidally effective amount of a compound according to claim 1 or a composition according to claim 15.